

USSR

UDC 669.285'27:620.17

PAVLOV, I. M., FALALEYEVA, Z. S., MAKUNIN, M. S., and SHELEST, G. Ye.,
Institute of Metallurgy, Academy of Sciences USSR

"Effect of Tungsten on Structure and Properties of Electron-Beam-Melted
Molybdenum"

Vliyanie vol'frama na strukturu i svoystva molibdena elektronoluchevoy
plavki (cf. English above), Moscow, 1971, 13 pp, ill, bibliography with 12
titles, No 3334-71 Dep (from RZh-Metallurgiya, No 1, Jan 72, Abstract No
11779 DEP by authors)

Translation of Abstract: The authors investigated vacuum-melted Mo with
0.7-10% W. Ingots were processed by extrusion through an eyelet. The
microhardness of as-cast and as-deformed alloys was determined. The mechan-
ical properties of alloys (short-term fracture) were determined at 500, 600,
700, and 1000°. The minimum microhardness for cast alloys is obtained with
0.7-2.0% W. To judge by microhardness, all melts after extrusion were more
homogeneous than as-cast. Softening of the investigated alloys occurs in
the 700-1000° range. The optimum combination of strength and plastic prop-
erties at room temperature is observed in the alloy with 2% W. Three
illustrations. Bibliography with 12 titles.

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USSR

UDC 539.4:536.453

PAVLOV, I. M., MEKHED, G. N., Wang Yu-Ming

"Mechanical Properties of High-Strength Steels Grades 45KhNT and 60KhNYu"

V sb. Protsessy formoizmeneniya met. i splavov (Processes of Deformation of Metals and Alloys--collection of works), Moscow, "Izuka", 1971, pp 109-118 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10V789)

Translation: The paper gives the mechanical properties and chemical composition of 45KhNT and 60KhNYu high-strength steels from room temperature to 1200°C. The mechanical properties were determined in tensile and impact strength tests. At room temperature, the breaking point of 45KhNT steel reaches 90-91 kg/mm², the yield point is 70-74 kg/mm², relative lateral contraction is 44%, and relative longitudinal extension is 17%. Under the same conditions, 60KhNYu steel has $\sigma_b \approx 98$ kg/mm², $\sigma_s \approx 76$ kg/mm², relative lateral contraction is 48%, and relative longitudinal extension and impact strength are the same as for 45KhNT steel. The presence of unstable regions of supercooled austenite on isothermal conversion diagrams means that these steels can be thermoplastically heat treated at low temperatures. Authors' abstract.
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Forming

UDC 621.771.23:621.771.011

USSR

ZHELEZNOV, Yu. D., PAVLOV, I. M., YARGSTORF, P., GRIGORYAN, G. G., and
FROINDEL', P., Moscow Institute of Steel and Alloys

"The Effect of Outer Parts on the Edgewise Deformation in the Light-Gauge
Sheet-Rolling Process. First Report"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy — Chernaya Metallurgiya, No
11, 1970, pp 81-85

Abstract: The interaction mechanism of outer parts with the deformation
source in the process of light-gauge sheet rolling is discussed from the
viewpoint of the edgewise interaction of internal longitudinal stresses.
The physical interpretation of this interaction is discussed by reference
to diagrams showing the alignment process of the transverse difference of
thickness of a band and the relation between the irregularity of the edge-
wise deformation and internal stresses. Experimental data show that with
increasing length of the band, the transverse difference of thickness de-
creases in the beginning and then becomes constant. A function is derived
from which a coefficient characterizing the capacity of self-alignment from
externally acting parts can be determined. A comparison of experimental
and theoretical rolling data is presented.

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1/2 025 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE INITIAL THICKNESS OF THE STRIP ON THE KINEMATIC
CONDITIONS OF THE ROLLING PROCESS -U-
AUTHOR--(02)-PAVLOV, I.M., SHAOTSZYA, T.
COUNTRY OF INFO--USSR
SOURCE--IZVEST. AKAD. NAUK SSSR, METALLY, JAN.-FEB, 1970, (1), 113-116
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH. IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL ROLLING, ALUMINUM, COPPER, METAL STRIP, SOLID
KINEMATICS, DYNAMIC SYSTEM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0413

STEP NO--UR/0370/70/000/001/0113/0116

CIRC ACCESSION NO--AP0124164

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 025

CIRC ACCESSION NO--A90124154

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINEMATIC ROLLING CONDITIONS ENCOUNTERED IN THE ROLLING OF AL AND CU STRIP WERE STUDIED IN RELATION TO THE INITIAL STRIP THICKNESS. THE CRITICAL ANGLE INCREASED WITH INCREASING INITIAL STRIP THICKNESS FOR A CONSTANT RELATIVE DEGREE OF REDUCTION. THE RATIO OF THE CRITICAL ANGLE TO THE ANGLE OF NIP INCREASED WITH DIMINISHING INITIAL STRIP THICKNESS FOR CONSTANT RELATIVE REDUCTION. THE CURVE RELATING THE FORWARD FLOW TO THE INITIAL STRIP THICKNESS WAS SIMILAR TO THAT RELATING THE CRITICAL ANGLE TO THE ANGLE OF NIP.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF SOME PARAMETERS OF COLD ROLLING ON THE TEXTURE AND
PROPERTIES OF TRANSFORMER STEEL -U-
AUTHOR--(04)-BRINZA, V.N., BARANTSOV, V.YA., PAYLOV, I.M., FEDOSOV, N.M.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 292-6
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--TRANSFORMER STEEL, COLD ROLLING, HOT ROLLING, MAGNETIC
PROPERTY, CRYSTALLIZATION, PLASTIC DEFORMATION, STEEL SHEET
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1934 STEP NO--UR/0048/70/034/002/0292/0296
CIRC ACCESSION NO--AP0115744
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 025

CIRC ACCESSION NO--AP0115744

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE EFFECTS OF THE THICKNESS OF HOT ROLLED SHEET AND THE DEFORMATION RATIOS APPLIED IN SUBSEQUENT COLD ROLLING OPERATIONS ON THE DEGREE OF PERFECTION OF THE SECONDARY RECRYSTN. TEXTURE AND THE MAGNETIC PROPERTIES OF FINISHED TRANSFORMER STEEL SHEET (CONTG. 3.18PERCENT Si) WERE STUDIED ON SPECIMENS 50 TIMES 500 MM, COLD ROLLED IN SEQUENTIAL OPERATIONS ON A LAB. ROLLING STAND (ROLLING SPEED 0.1M-SEC) FROM INITIAL THICKNESSES OF 2.2, 2.5, AND 3.0 MM TO A FINAL THICKNESS OF 0.33 MM. STD. ANNEALING PROCEDURES WERE USED. THE DISTRIBUTION OF TEXTURE DEVIATIONS, THE SP. CORE LOSSES, AND THE MAGNETIC INDUCTION WERE DETD. AND RELATED TO THE DISLOCATION STRUCTURE IN THE DEFORMED METAL. WHEN THE THICKNESS OF THE INTERMEDIATE SHEET (BEFORE THE 2ND COLD ROLLING) WAS 0.85 OR 1.0 MM, THE TEXTURE DEVELOPED BY SECONDARY RECRYSTN. WAS INDEPENDENT OF THE THICKNESS OF THE HOT ROLLED SHEET. WHEN THE INTERMEDIATE SHEET THICKNESS WAS 0.7 MM THE EFFECT OF THE THICKNESS OF THE HOT ROLLED SHEET WAS SUBSTANTIAL; LESS PERFECT TEXTURES WERE OBTAINED FROM SHEET 2.2 AND 3.0 MM THICK. THE SECONDARY RECRYSTN. TEXTURE WAS IMPAIRED AND THE SP. CORE LOSSES WERE INCREASED WHEN THE HIGHEST DEFORMATION WAS APPLIED IN INTERMEDIATE ROLLING. MORE PERFECT TEXTURES WERE ATTAINED WHEN THE DEFORMATION WAS GRADUALLY DECREASED OR WAS UNIFORM PER PASS, OR WHEN THE MIN. DEFORMATION WAS APPLIED IN THE INTERMEDIATE ROLLING.

FACILITY:

MUSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SCIENTIFIC ASPECTS OF THE DEVELOPMENT OF NEW PROCESSES FOR THE
PLASTIC WORKING OF METALS -U-
AUTHOR--PAVLOV, I.M. *P*
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, IZVESTIYA AKADEMII NAUK USSR, METALLY, NO 2, MAR-APR 70,
PP 29-44
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--PLASTIC DEFORMATION, COMPOSITE MATERIALS, METAL ROLLING,
PERIODIC ROLLING, BIMETAL, METAL LUBRICANT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0929

STEP NO--UR/0370/70/000/002/0029/0044

CIRC ACCESSION NO--AP0119813

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0119813

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A REVIEW IS MADE OF ACHIEVEMENTS AND TRENDS IN THE PLASTIC WORKING OF METALS. THE ARTICLE IS DIVIDED INTO 14 SECTIONS: THE PLASTICITY OF METALLIC, BIMETALLIC (MULTILAYERED), AND COMPOSITE MATERIALS; THE DEFORMATION RESISTANCE OF THESE MATERIALS; THE EFFECT OF PLASTIC DEFORMATION ON THE STRUCTURE AND PROPERTIES OF THESE MATERIALS; NONUNIFORM PLASTIC DEFORMATION; CONTACT FRICTION AND PROCESSING LUBRICANT; PLASTIC WORKING PROCESSES IN VACUUM, INERT MEDIA, AND PROTECTIVE COATINGS; HIGH RATES OF PLASTIC WORKING; INCREASED REDUCTIONS IN THE PLASTIC WORKING OF METALS; CONDITIONS OF "INFINITE ROLLING" PROCESSES; PROCESSES OF BENT SHAPES PRODUCTION; PROCESSES OF PERIODIC ROLLING PRODUCTION; QUALITY IMPROVEMENT OF PLASTIC WORKING PRODUCTS; AND NEW PROCESSES BASED ON ULTRA HIGH AND ULTRA LOW TEMPERATURES AND PRESSURES. IT IS CONCLUDED THAT THE OVERALL STATE OF THE SCIENTIFIC WORK IN THE FIELD OF THE PLASTIC WORKING OF METALS IN THE USSR IS COMPARABLE TO THAT IN WESTERN COUNTRIES.

UNCLASSIFIED

UDC 669.293:669.774.21

USSR

PAVLOV, I. M., RYKOV, V. A., SAUTIN, Yu. I., IZOTOV, V. M., KRICHENSKIY, Ye. M.,
YELCHANIY, V. N., and NEMTSOV, A. S.

"Some Problems in the Manufacture of Welded Pipes"

Moscow, Tsvetnyye Metally, No 3, Mar 70, pp 50-52

Abstract: The cost of seamless pipe from niobium and its alloys is high due to the low percentage of pipe fit for service (10--15%). The present study describes a more economical production technology for thin-walled pipe from a shelf. Niobium ingots alloyed with titanium and zirconium were used as the starting material. The mechanical properties of the plates and the electron-beam welding parameters are given in tabular form. The mechanical test data show that preliminary vacuum annealing of the parent metal slightly reduces the strength properties (by 12--15%) and considerably increases elongation per unit length (1.5 to twofold). The strength properties of the welds are somewhat lower than those of the parent material whereas elongation per unit length remains at the same level. Metallographic analysis revealed coarse-grained dendritic structure (for the weld area) with dark inclusions. The microhardness is the same in both the weld and parent metal and ranges from 270 to 330 kg/mm². The microhardness of electron-beam welds is about the same as that of argon-arc welds. Prior to

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PAVLOV, I. M., Tsvetnyye Metally, No 3, Mar 70, pp 50-52

rolling the billets were annealed at 1200°C. For 11.6- and 12-mm pipes the total deformation was 40 to 60%; for 20 mm pipes -- 33%. The pipes passed flattening tests to the point of wall contiguity. The new technology of the process makes it possible to reduce by 2 to 2.5 times the cost of the finished product, with the physicomachanical properties remaining the same.

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USSR

UDC: 681.3:519.2

TIKHOMIROV, D. L., PAVLOV, I. S., GRIGOR'YEVA, G. A.

"A Device for Analyzing Pseudorandom Test Sequences"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328469, Division G, filed 9 Jun 70, published 2 Feb 72, p 159

Translation: This Author's Certificate introduces a device for analyzing pseudorandom test sequences. The device contains a recurrent code ring register, half-adders, frequency dividers, a control flip-flop, AND and OR circuits, and inverters. As a distinguishing feature of the patent, the effectiveness of analyzing pseudorandom test sequences is improved by connecting one of the inputs of the first OR circuit to an input of the first AND circuit and also through an inverter to the output of the first half-adder. The second input of the OR circuit is connected to an input terminal of the device and also through a second inverter to another input of the first AND circuit. The output of the first OR circuit is connected through a third inverter to the input of the second OR circuit. A third input of the first AND circuit and a second input of the second AND circuit

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TIKHOMIROV, D. L. et al., USSR Author's Certificate No 328469

are connected through the second OR circuit to the input of the first frequency divider. This frequency divider is connected through decoders to the inputs of the control flip-flop, whose outputs are connected to the first inputs of the third and fourth AND circuits. The second input of the third AND circuit is connected to the output of the second half-adder. This half-adder is connected to one of the inputs of the first half-adder, whose second input is connected to the second input of the fourth AND circuit and to the other input terminal of the device. The reset line of the first frequency divider is connected to the output of the second frequency divider. The second frequency divider is connected to a cadence pulse source.

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USSR

UDC:621.791.92.052.001.5:669.15-194:62-418

PAVLOV, I. V., LESHCHINSKIY, L. K., VASILENKO, A. I., Zhdanov Metallurgical Institute

"Peculiarities of the Structure of the Fusion Zone Produced During Surfacing with a Thin Austenitic Strip on Type 45 Steel"

Moscow, Svarochnoye Proizvodstvo, No 12, Dec 73, pp 33-35

Abstract: This work studies the possibility of acting on the structure and properties of the transition zone produced during surfacing of type 45 steel with a thin austenitic strip by changing the shape and dimensions of the electrode, with a low content of alloying elements in the electrode. The decrease in the participation of the base metal in the built-up surface metal characteristic for thin electrode strips (0.1-0.2 mm thick) allows a surfaced metal to be produced with higher austenite reserve which, in turn, can produce a narrower martensite layer between the base metal and the surfaced metal. Reduction of the temperature of the tail portion of the bath achieved by the use of a thin electrode strip allows the base-metal inclusions in the surfaced metal to be retained primarily unmelted.

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USSR

UDC 519.21

PAVLOV, K. A.

"Optimization of Control with Certain Technical Limitations"

Nelineyn. i Optimal'n. Sistemy [Nonlinear and Optimal Systems -- Collection of Works], Moscow, Nauka Press, 1971, pp 146-154, (Translated from Referativnyy Zhurnal, Kibernetika, No 10, 1971, Abstract No 10 V128).

NO ABSTRACT.

USSR

UDC 629.78.062.2

PAVLOV, L. F.

"One Problem of Optimal Control"

Tr. Giproniyaviaproma [Works of State Planning and Scientific Research Institute for the Aviation Industry], No 6, 1971, pp 55-59, [Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.117 by T. A. Ye.).

Translation: This article studies the selection of the optimal control and parameters of an object. The problem of optimization of trajectories, consisting of several sectors, is solved by the method of swiftest descent. The modification of the method of swiftest descent suggested allows optimal parameters of an object and control program to be determined during the process of planning. 2 Biblio. Refs.

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USSR

AKHMANOV, S. A., D'YAKOV, Yu. Ye., PAVLOV, L. I. (Moscow State University)

"Statistical Phenomena in Stimulated Raman Emission Excited by Broad-Band Optical Pumping"

Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, February 1974, pp 520-536

Abstract: Results of a theoretical and experimental investigation of stimulated scattering in the field of an optical noise pump are presented. A complete theoretical description of the phenomenon is presented in the approximation of a prescribed Gaussian noise pumping field. Coherent and incoherent scattering modes and the transition region between them are investigated in detail. The increments, correlation functions, and Stokes radiation and optical phonon spectra are calculated for arbitrary relations between the pumping correlation time (τ_k), dephasing time T_2 , and characteristic group delay time T_3 . It is shown that in many cases of practical interest noise pumping may be at least as effective as harmonic pumping with the same mean intensity. The feasibility of generation of very monochromatic optical phonons (spectral line width $\Delta\nu_0 \ll \Delta\nu_0 = (\pi c T_2)^{-1}$) in an optical noise field is noted. The theoretical conclusions are verified experimentally

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AKHMANOV, S. A., et al., Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki,
February 1974, pp 520-536

by studying induced Raman emission in liquid nitrogen excited by a wide-band optical noise source. The possibility of obtaining effective scattering in an essentially nonquasistatic mode (for $\tau_k \ll T_2$, $\tau_k \ll T_3$) is demonstrated. Spectral and energy measurements are performed which are compared with theory. The results can be employed for analyzing various types of scattering and such problems as decay instabilities in a plasma, etc.

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USSR

UDC 621.375.7

D'YAKOV, YU. YE. and PAVLOV, L. I.

"Parametric Amplification of Light in the Pumping Field"

V sb. Nelineyn. protsessy v optike (Nonlinear Processes in Optics -- collection of works), Vyp.2, Novosibirsk, 1972, pp 367-376 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 D196)

Translation: None.

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USSR

UDC: 539.1.074.3:535.853

KOVALEV, V. P., KAPCHIGASHEV, S. P., PAVLOV, L. P.

"Use of Scintillation Spectrometer with Stilbene Crystal for Dosimetry of Mixed Gamma-Neutron Radiation"

Dozimetriya i Radiats. Protsessy v Dozimetr. Sistemakh [Dosimetry and Radiation Processes in Dosimetric Systems -- Collection of Works], Tashkent, Fan Press, 1972, pp 188-192 (Translated from Referativnyy Zhurnal Metrologiya i Izmeritel'naya Tekhnika, No 3, 1973, Abstract No 3.32.1382)

Translation: The possibility is studied of using a scintillation spectrometer with a stilbene crystal for dosimetry of neutrons and gamma radiation in mixed fields. The transfer factor $Q(E)$ from dose values in the detector material to dose absorption in a standard tissue is calculated. It is shown that for a broad range of energies of gamma quanta and neutrons, the value of $Q(E)$ for stilbene is practically constant. Absolute doses and ratios of doses of neutrons and gamma quanta from a (Pu-Be) source without a shield and with a shield of lead 5 cm thick are also studied. The possibility is discussed of using this scintillation dosimetry method for separate determination of the doses of intensive streams of neutrons and gamma radiation generated in the targets of a linear electron accelerator. 8 biblio. refs.

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USSR

UDC 539.12.08

KOVALEV, V. P., KAPCHIGASHEV, S. P., and PAVLOV, L. P.

"Dosimetry of Neutron-Gamma Radiation With a Scintillation Spectrometer"

Moscow, Atomnaya Energiya, Vol 34, No 1, Jan 73, pp 7-10

Abstract: A study was made of the possibility of using a stilbene crystal scintillation spectrometer for the dosimetry of mixed neutron-gamma radiation. By applying the principle of dividing impulses by their form, the doses from neutrons and from gamma radiation can be determined separately. Experimental investigations revealed that the electron spectrum in the stilbene crystal in the vicinity of the dividing threshold of (γ-n) --components can be described by the function of the differential electron spectrum

$$\frac{dN}{dE_e} (E_e) = C \cdot e^{-\alpha E_e} \quad . \quad \text{In this case, only the expo-}$$

ponential index α changes in the investigated 0.2-4.5-Mev energy range of gamma-quanta. Measurements were made to determine the radiation characteristics of a Pu-Be neutron source and a source of mixed radiation from a linac. It is shown that the use of 50-cm iron shielding results in the creation of a radiation field in which the magnitude of the neutron component is equal to twice that of the gamma component. Four figures, three formulas, two tables, seven bibliographic references.

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USSR

ADAMENKO, A. I., ROLIK, A. I., PAVLOV, L. V., SHKIL'KO, G. YA., YAKOVLEV, A. I.

"Procedure for Manufacturing Stators for AC Electric Motors"

USSR Author's Certificate No 370697 (from Otkrytiya, Izobreteniya, Promyshlennyye obraztsy, Tovarnyye znaki (Discoveries, Inventions, Industrial Models, Trademarks, No 11, 1973, page 171)

Translation: This method of manufacturing stators for AC electric motors by which the winding is placed in the gap of a nonmagnetic electrically conducting mount, the mount is inserted into a hollow in the stator setting it by the grooves opposite the stator grooves, an electric pulse is fed to the winding to create a magnetic field pulling the winding into the stator grooves is distinguished by the fact that in order to decrease the forces required to throw the winding from the mount into the stator and increase the productivity of labor, the grooves of the stator and the mount are made open and arranged in parallel for each pair of poles of the planes, and the conductors of the winding are shaped in advance into a coil group with calibrated grooved parts and with soft frontal parts.

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UDC 625.983:621.395

USSR

GOLENKOV, A.N., PAVLOV, L.YE.

"Device For Calibration Of Hydrophones"

USSR Author's Certificate No 258073, filed 4 July 68, pub 14 Jan 71
(from RZh:Elektronika i yeye primeneniye, No 1, Jan 72, Abstract No 1A647P)

Translation: A device is proposed for calibration of hydrophones, which contains a high-frequency oscillator connected across a switch with a radiator and a reversible converter, to the output of which, across a voltage divider, is connected an indicator, and a low-frequency oscillator connected across a voltage divider and the switch with the indicator. With the object of simplifying the process and decreasing the measuring time, to the output of the low-frequency oscillator a block for extraction of the square root is connected, the output of which is connected to the indicator. Use of the low-frequency oscillator during extraction of the square root excludes frequency errors and simplifies the design of the block for extraction of the square root. 1 ill. L.K.

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USSR

UDC: 621.374.4

PAVLOV, N. A.

"Frequency Multipliers Which Use Dynamic Breakdown of Semiconductor Diodes"

V sb. Poluprovodn. pribory v tekhn. elektrosvyazi (Semiconductor Devices in Electrical Communications Technology--collection of works), Vyp. 5, Moscow, "Svyaz'", 1970, pp 153-158 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D27)

Translation: A low-frequency model is used to show the operating principle of a semiconductor diode in a frequency multiplier in the state where the semiconductor diode may have several conduction angles during the period of the triggering frequency. Bibliography of two titles. Resumé.

USSR

UDC: 621.317.328(088.8)

PAVLOV, N. F.

"A Method of Measuring the Parameters of a Polarization Ellipse"

Avt. sv. SSSR (Author's Certificate USSR) Class 21e, 12, (G 01r)
No. 253229, Application 23.12.66, Publication 26.03.70 (from RZh-
Radiotekhnika, No. 3, March 71, Abstract No. 3A356P)

Translation: A method is proposed for measuring the parameters of a polarization ellipse by using a device consisting of two rotating polarization planes with a quarter-wave polarizer between them. By this method, for the purpose of simplifying the measurements, the angle of orientation of the polarization ellipse is determined from the maximum signal of an indicator when the rotor is turned, the measured signal being applied to the rotor input, and the ellipticity angle is determined from the minimum signal when another rotor is turned. E. L.

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USSR

UDC: 537.31

POLYAKOV, N. N., KUKUY, A. S., GOLUBEV, V. I., PAVLOV, N. I., Gor'kiy
Physicotechnical Research Institute

"Checking the Homogeneity of Semiconductor Single Crystals From Measurements of Their Resistivity"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 607-613

Abstract: Correction factors are calculated to account for the dimensions of the specimen and probe position in resistivity measurements by the four-probe method on rectangular and cylindrical single crystal semiconductors. The results of computer calculations are presented in tables and curves. It was found that reducing the thickness of a specimen past half the distance between probes does not affect the measurement results. It was also found that the specimen can be considered infinitely thick beyond a thickness of five times the distance between probes.

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UDC: 539.128.2

USSR

BALDIN, A. M., BEZNOGIKH, Yu. D., ZINOV'YEV, L. P., ISSINSKIY, I. B., KAZANSKIY, G. S., MIKHAYLOV, A. I., MOROZ, V. I., ~~PAVLOV, N. I.~~, and FUCHKOV, G. P.

"Acceleration and Removal of Deuteron Beams from the OIYaI Synchrophasotron"

Moscow, Pribory i Tekhnika Eksperimenta, No. 3, 1971, pp 29-31

Abstract: This article describes the realization of a proposal for accelerating and extracting deuterons with existing synchrophasotron systems made in an earlier article (Beznoгих, Yu. D., et al, Reprint OIYaI, 1968, No. R9-4214, Dubna). The basic idea of the proposal was to multiply the linear acceleration by two through halving the velocity of the deuterons going into and coming out of the linear accelerator compared to the velocity of the protons. The acceleration in the synchrotron is done in two steps: first, doubling the acceleration; second, reaching the limiting frequency of the accelerating system and then making the transi-

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BALDIN, A. M., et al., Priboiy i Tekhnika Eksperimenta, No 3, 1971, pp 29-31

tion to the plateau in the first multiple of the acceleration. By using a debuncher at the accelerator output, the capture of the deutons in first the quasi-betatron and then the synchrotron modes was increased. The authors are associated with the OIYaI (Joint Institute of Nuclear Research, Dubna).

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1/2 015
UNCLASSIFIED
TITLE--MEASURING THE HALL COEFFICIENT OF LONG CYLINDRICAL SEMICONDUCTING
SAMPLES -U-
AUTHOR--(03)--RUBTSOVA, R.A., PAVLOV, N.I., KONKOV, V.L.
COUNTRY OF INFO--USSR
SOURCE--ZAVOD. LAB., 1970, 36, (2), 201-203
DATE PUBLISHED-----70
SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR., PHYSICS
TOPIC TAGS--HALL CONSTANT, ELECTROMOTIVE FORCE, SEMICONDUCTOR PROPERTY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/0198
CIRC ACCESSION NO--AP0129454
STEP NO--UR/0032/70/036/002/0201/0203
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129454

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A FORMULA FOR CALCULATING THE HALL COEFF. OF LONG CYLINDRICAL SEMICONDUCTING SAMPLES ON THE BASIS OF HALL E.M.F. MEASUREMENTS IS DERIVED. IN THESE MEASUREMENTS A STEADY CURRENT IS PASSED INTO THE SAMPLE THROUGH LOW RESISTANCE CURRENT CONTACTS DEPOSITED ON THE ENDS. A UNIFORM MAGNETIC FIELD IS DIRECTED AT RIGHT ANGLES TO THE SAMPLE AXIS. VARIATIONS IN THE MAGNETIC FIELD AT A DISTANCE OF MORE THAN TWO SAMPLE DIA. FROM THE HALL CONTACTS PRODUCE ONLY A NEGLIGIBLE ERROR IN THE RESULTS.

UNCLASSIFIED

USSR

UDC 538.632

KON'KOV, V. I., PAVLOV, N. I., and POLYAKOV, M. N.

"Measuring the Conductivity of Nonuniform Semiconductor Layers by the Probe Method"

Tomsk, Izvestiya VUZ--Fizika, No. 10, 1971, pp 33-38

Abstract: The nonuniform semiconductor layers discussed in this article are those which have undergone diffusion, epitaxy, or ion bombardment for investigation of their physical characteristics, and in which the conductivity varies with depth. The authors theoretically examine the possibility of using the four-probe method of measuring the conductivity of such layers and develop a simple formula for the conductivity which can be used for determining its average value under the conditions of that method. They also consider some of the relationships for the change in conductivity that are most often encountered in measurement practice and derive a formula for the error in their theoretical computation. They are associated with the Gor'kiy Physical-Technical Research Institute.

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- 46 -

USSR

UDC 537.311.3:546.26'28

BARINOV, YU.B., BULGAPOV, YU.V., DEM'YANCHIK, D.V., IGLITSYN, M.I., IL'IN, M.A., KASAGANOVA, M.G., ~~FAVICH, N.M.~~, SOLOMATIN, V.N.

"Effect Of Irradiation On The Physical Properties Of Hexagonal Silicon Carbide"

V sb. Radiats. fiz. nemet. kristalloy (Radiation Physics Of Nonmetallic Crystals-Collection Of Works), Vol. 3, Part 2, Kiev, "Nauk.dumka," 1971, pp 105-110 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10336)

Translation: The effect was studied of irradiation by α particles and neutrons on the spectra of electronic paramagnetic resonance and the optical spectra of n-type α -SiC doped with nitrogen and p-type doped with boron. In the spectra of the electronic paramagnetic resonance of n-type specimens, the irradiation caused a decrease of the old and the appearance of a number of new lines. Irradiation of p-type crystals by α -particles lead to an increase of the optical absorption in the 2--25 micrometer region and irradiation by neutrons caused an increase of absorption at $\lambda < 0.55$ micrometer and a decrease of absorption in the $0.55 < \lambda < 6$ micrometer region. 3 ill. 1.V.

1/1

USSR

UDC 681.325.65

PAVLOV, N. N.

"Input Monitoring Method for Standard Logic Modules"

Tr. Mosk. in-ta elektron. mashinostr. (Works of Moscow Institute of Electronic Machine-Building), 1971, vyp. 16, Part 2, pp 118-126 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B127)

Translation: The article considers the advisability of carrying out the input monitoring of standard logic modules and a method of doing so. Recommendations are made regarding the selection of electrical conditions for a module which simulate its temperature conditions.

1/1

- 28 -

USSR

UDC 678.039.72

TATEVOSEAN, YE. L., PILATEV, I. S., PAVLOV, N. N., and MATVEEV, YE. N.

"Aging of Plastics Under Tropical Conditions"

Moscow, Khimicheskoye Morye, No 3, 1972, pp 64-67

Abstract: Stability of plastics was investigated under conditions of a dry and a humid hot climate. Comparison of laboratory and field methods showed that a 3 month laboratory test corresponded to 2 years of field study. Monomers were found to be stable under tropical conditions for 5 years, and on the basis of the insignificant changes which took place, the materials may be guaranteed for up to ten years. Epoxy resins and compounds made from them were stable up to two years at least, some parameters changing significantly after 4 months. The polyamides begin to deteriorate after 2.5 months, unless they are modified with fillers. The most significant changes were found to be due to the radiation; these types of materials could possibly be used in dry tropic climates, provided they were not exposed to direct sunlight. Polystyrenes maintain their properties up to six months; when copolymerized with methacrylates or methyl acrylate, their stability increases to about 2 years. Nonstabilized polyolefines maintain their properties for three months, the stabilized ones -- for up to one year; the destruction of this polymer is due to solar radiation.

1/1

USSR

UDC 621.762.4.001:669

SMIRNOV, V. S., PAVLOV, N. N., and VINOGRADOV, S. Ye.

"Application of the Lagrange Variational Principle in Pressure Working of Metallic Powders"

Tr. Leningr. politekhn. in-ta [Works of Leningrad Polytechnical Institute], No. 315, 1970, pp. 10-15 (Translated from Referativnyy Zhurnal-Metallurgiya, No. 2, 1971, Abstract No. 2 G388 by the authors).

Translation: The possibility is studied of applying methods of the solution of problems of elasticity and plasticity for solid bodies to discrete bodies. A criterion is developed allowing the applicability of such methods to be evaluated. Formulas are produced for solution of the planar problem of pressing of powders by variational methods. 3 figures; 6 biblio. refs.

1/1

1/3 035 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PROBLEM OF ORGANIZATION OF WORK AND IMPROVEMENT OF THE COMPETENCE
OF SHIFT MEDICAL PERSONNEL -U-
AUTHOR-(03)-KONONENKO, L.N., PAVLOV, N.V., SINITSYN, S.A.
COUNTRY OF INFO--USSR
SOURCE--ODESSA; MOSCOW, SOVETSKOYE ZDRAVOUKHRANENIYE, RUSSIAN, NO 3, 1970,
PP 46-49
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, BEHAVIORAL AND SOCIAL
SCIENCES
TOPIC TAGS--MEDICAL PERSONNEL, SANITATION, PUBLIC HEALTH, EPIDEMIOLOGY,
NAVAL MEDICINE, MEDICAL TRAINING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3005/0054 STEP NO--UR/0753/70/000/003/0046/0049
CIRC ACCESSION NO--AP0132789
UNCLASSIFIED

2/3 035

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132789

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE BLACK SEA AND SEA OF AZOV MARINE HEALTH DIVISION, ORGANIZED IN 1923, HAS GROWN TO BECOME THE LARGEST AGENCY IN THE ADMINISTRATION OF THE MEDICAL SANITATION SERVICE OF WATER TRANSPORT IN THE BLACK SEA AND SEA OF AZOV BASIN. ITS SANITATION AND EPIDEMIC CONTROL ESTABLISHMENTS AND THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS ARE LOCATED IN THE FIVE SOUTHERN OBLASTS OF THE UKRAINE. THEY SERVE SEAMEN, SHIPS AND FACILITIES OF THE BLACK SEA, SEA OF AZOV AND DANUBE MARITIME SHIPPING COMPANIES, THE ODESSA ADMINISTRATION OF THE ANTARCTIC AND OCEANIC FISHING FLEET, THE SEVASTOPOL' AND DERCHE' OCEAN FISHING ADMINISTRATIONS, THE WORKERS AND EMPLOYEES OF THE SHORE ADMINISTRATIONS OF SHIPPING COMPANIES AND FLEETS, OF SHIP REPAIR PLANTS PORTS, AND CONSTRUCTION ORGANIZATIONS, AND THE STUDENTS OF HIGHER AND SECONDARY EDUCATIONAL INSTITUTIONS OF THE MINISTRY OF MARITIME FLEET AND MINISTRY OF FISH ECONOMY USSR. THE BLACK SEA AZOV MARINE HEALTH DIVISION, WHICH HAS ACHIEVED IMPROVEMENT IN SERVICE TO SHIPBOARD PERSONNEL, IS PAYING MUCH ATTENTION TO IMPROVING THE QUALIFICATIONS AND SPECIALIZATION OF SHIP DOCTORS. IN THE PAST SHIPBOARD MEDICAL WORKERS HAVE BEEN TRAINED IN THE PERMANENT COURSES OF THE ODESSA INSTITUTE FOR ADVANCED TRAINING OF PHYSICIANS, BUT IN THE FIFTIES IT WAS TRANSFERRED TO ZAPOROZH'YE AND THE COURSES STOPPED. ADVANCED TRAINING AND SPECIALIZATION (IN SURGERY, TRAUMATOLOGY, AND THERAPY) HAVE BEEN CARRIED OUT IN THE CLINICS OF THE MEDICAL INSTITUTE, IN INSTITUTES FOR ADVANCED TRAINING OF PHYSICIANS, AND ON THE JOB IN THERAPEUTIC AND PREVENTIVE MEDICAL ESTABLISHMENTS OF THE MARINE HEALTH DIVISION.

UNCLASSIFIED

3/3 035

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132789

ABSTRACT/EXTRACT--THE SPECIFIC FEATURES OF MARINE MEDICINE ARE LOST FROM VIEW IN THIS TRAINING, ITS MOST IMPORTANT FIELDS ARE NOT GIVEN ATTENTION, AND THE COURSE WORK IS ONE SIDED. IN ORDER TO SUPPLEMENT THE PRESENT PRACTICE, THE MARINE HEALTH DIVISION, WITH THE CONSENT OF THE MINISTRY OF HEALTH UKRAINIAN SSR, THEREFORE ORGANIZED AT THE BEGINNING OF 1968 COURSES FOR SPECIALIZATION OF SHIPBOARD MEDICAL WORKERS; THE COURSES ARE GIVEN IN THE FACILITIES OF THE BASIN HOSPITAL AND SANITATION EPIDEMIOLOGY STATION AND LAST 4.5 MONTHS. THE PRINCIPAL FIELDS IN THE SYLLABUS OF THE COURSES ARE EMERGENCY SURGERY, THERAPY, STOMATOLOGY, SHIPBOARD SANITATION AND HYGIENE, SANITARY PROTECTION OF MARITIME BOARDERS, ETC. FACILITY: BLACK SEA AND SEA OF AZOV MARINE HEALTH DIVISION AND THE BASIN SANITATION EPIDEMIOLOGY STATION.

UNCLASSIFIED

USSR

UDC: 621.385.623.4(088.8)

PAVLOV, O. I., PASMANNIK, V. I.

"A Multicavity Drift Klystron"

USSR Author's Certificate No 275239, filed 13 Jun 68, published 22 Oct 70
(from RZh-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6A159P)

Translation: This Author's Certificate introduces a multicavity drift klystron which contains output and intermediate cavities and a multiple-gap output cavity made in the form of a system of coupled cavities. In order to increase the efficiency by additional grouping of electron bunches, one or more auxiliary cavities which are not electromagnetically coupled to the output cavity are placed between each pair of coupled cavities.

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USSR

UDC 621.385.63:621.385.65

SUKHODOLETS, L.G., PAVLOV, O.I., PASMANNIK, V.I., PRIEZHNEV, G.M.

"Waveguide--Coaxial Junction"

USSR Author's Certificate No 276182, filed 28 Mar 69, pub 12 Oct 70 (from
RZh--Elektronika i yeye primeneniye, No 4, April 1971, Abstract No 4A169P)

Translation: The proposed waveguide--coaxial junction for lead-out of the energy of high-frequency electrovacuum devices contains an antenna and a section of rectangular waveguide. With the object of eliminating the possibility of development of an electron discharge in a vacuum, the waveguide walls near the antenna are made in the form of metal grids which screen the additional space, producing a chamber--trap for the electrons.

1/1

USSR

UDC: 621.385.624

PAVLOV, O. I., PASMANNIK, V. I.

"A Multiple-Resonator Drift-Tube Klystron"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrazttsy, Tovarnyye Znaki, No 22, 1970, Soviet Patent No 275239, Class 21, filed 13 Jun 68, p 58

Abstract: This Author's Certificate introduces: 1. A multiple-resonator drift-tube klystron which contains input and intermediate resonators and a multigap output resonator made in the form of a system of coupled resonators. As a distinguishing feature of the patent, additional subgrouping of electron bunches is provided to improve efficiency. Between each pair of coupled resonators is one or more auxiliary resonators which are not electromagnetically coupled to the output resonator. 2. A modification of this klystron distinguished by the fact that some or all of the auxiliary resonators are tuned to higher harmonics of the fundamental frequency. 3. A modification of this klystron with the distinguishing feature that phase correction of the flight of the electron bunches into the gaps of the output resonator is provided by selecting the distances between the gaps of this resonator so that they differ in accordance with the sequential change in the velocity of the electron bunches after passing through each of the gaps.

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USSR

UDC: 621.385.624

PAVLOV, O. I., PASMANNIK, V. I., KHABI, V. S.

"A Klystron"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 24, 1970, Soviet Patent No 277116, Class 21, filed 28 Feb 68, p 63

Abstract: This Author's Certificate introduces: 1. A klystron which contains resonators with distributed interaction made up of a housing and drift tubes fastened at the center to the housing by means of radial metal rods. As a distinguishing feature of the patent, the operating stability and efficiency of the klystron are improved by connecting the metal rods to the housing through coaxial matched SHF loads which are fastened to the housing of the resonators. 2. A modification of this klystron distinguished by the fact that the coaxial matched SHF loads are made in the form of a long line coiled into a semicoaxial structure in which the outer and inner conductors are covered with a conducting paste.

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USSR

UDC 621.385.6

PAVLOV, G.I., PASKANNIK, V.I., ARTYUKH, I.G.

"Characteristics Of A System Of Combined Resonators With Intermediate Automodulation Of Electron Flow In A Low-Signal Approximation"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronics Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 2, pp 11-25 (from RZh--Elektronika i yeye primeneniye, No 8, August 1970, Abstract No 8A17)

Translation: In the case of a system of combined resonators with intermediate automodulation of electron flow, expressions are obtained for computation of the equivalent interaction factor and total electron conductivity. The computed curves are presented. The effect is investigated of the geometry of the system and tuning of the resonator on the characteristics mentioned. The dependence is shown of the equivalent interaction factor and electron conductivity on the magnitude of the space charge parameter. In comparison with known one- and multi-gap resonators, the system described has better modulation properties and a large magnitude of inserted electron conductivity. It is possible to use this system as the bunching section of an electron device. 9 ill. 4 ref. G.E.

1/1

USSR

UDC 621.372.833.1

SUKHODOLETS, L. G., PAVLOV, O. I., PASMANNIK, V. I., PRIYEZZHEV, G. M.

"A Waveguide-to-Coaxial Adapter"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 23, Author's Certificate No 276182, Filed 28 Mar 69, p 63

Abstract: This author's certificate introduces a waveguide-to-coax adapter for tapping the energy of electronic rf vacuum devices. The unit contains an antenna and a section of rectangular waveguide. As a distinguishing feature of the patent, the possibility of an electronic vacuum discharge is eliminated by making the waveguide walls close to the antenna in the form of metallic grids which shield the additional spaces which form electron trapping chambers.

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USSR

UDC 536.53:536.423

PAVLOV, P. A., SKRIPOV, V. P.

"An Experimental Installation for the Study of Explosive Boiling"

Moscow, Izmeritel'naya Tekhnika, No 10, Oct 70, pp 42-44

Abstract: A platinum wire, 0.02 mm in diameter, is used as a quick-response temperature sensor in an installation for studying boiling at fluctuation centers with massive heat release. An electronic circuit with oscillographic presentation was assembled, which made it possible to measure the temperature of the wire at the moment of explosive boiling (T^*). The measurement error does not exceed several degrees. The experiments were conducted at different pressures. Good agreement was obtained between T^* and the temperature of intensive fluctuation nucleus formation, calculated according to kinetic theory. Simultaneously with the oscillographic measurements, at atmospheric pressure the wire is photographed through a microscope. 2 figures, 1 table, 6 bibliographic entries.

1/1

USSR

UDC 8.74

PAVLOV, P. G., BELYAYEVA, T. M.

"Two Procedures for Allocating the Transfer Graph of the Program Control Algorithm in the Digital Computer Memory"

V sb. Ekon.-mat. metody i programir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems--collection of works), Moscow, 1972, pp 155-158 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V450)

No abstract

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--REPRODUCTION OF BASIC FUNDS IN THE USSR --U--
AUTHOR--(04)--ARAKELIAN, A.A., VOROTILOV, V.A., KANTOR, L.M., PAVLOV, P.M.
COUNTRY OF INFO--USSR
SOURCE--REPRODUCTION OF BASIC FUNDS IN THE USSR (VOSPROIZVODSTVO OSNOVNYKH
FUNDOV V SSSR) MOSCOW, MYSL', 1970, 484 PP
DATE PUBLISHED-----70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--INDUSTRIAL MANAGEMENT, FINANCE, ECONOMIC SYSTEM CAPITAL
INVESTMENT, INDUSTRIAL DEVELOPMENT, S AND T DEVELOPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/0051 STEP NO--UR/0000/70/000/000/0001/0484
CIRC ACCESSION NO--AMC123832
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AM0123832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I
ECONOMIC NATURE OF BASIC INDUSTRIAL FUNDS 3. II STRUCTURE OF BASIC
FUNDS 43. III BRANCH STRUCTURE OF BASIC FUNDS 58. IV INDICES OF
UTILIZATION OF BASIC FUNDS AND PREREQUISITES FOR THEIR HIGH
EFFECTIVENESS 74. V INCREASE OF THE ACTIVE PERIOD OF BASIC FUNDS 107.
VI IMPROVEMENT OF UTILIZATION OF BASIC FUNDS PER UNIT OF TIME 132.
VII ECONOMIC REFORM AND IMPROVEMENT OF UTILIZATION OF BASIC FUNDS 161.
VIII DEPLETION OF BASIC FUNDS 181. IX SERVICES OF BASIC FUNDS 201. X
DEPRECIATION OF BASIC FUNDS 220. XI ACCUMULATION OF BASIC FUNDS AS A
FACTOR OF HIGH RATES OF DEVELOPMENT OF THE NATIONAL ECONOMY 231. XII
CAPITAL INVESTMENTS AND PROPORTIONS OF REPRODUCTION OF BASIC FUNDS 308.
XIII CAPITAL CONSTRUCTION AND REPRODUCTION OF BASIC FUNDS 358. XIV
INNOVATION OF BASIC FUNDS BASED ON THE TECHNOLOGICAL PROGRESS 396. XV
BALANCE OF BASIC INDUSTRIAL FUNDS 446. THE MONOGRAPH DEALS WITH MAJOR
PROBLEMS IN REPRODUCTION OF BASIC INDUSTRIAL FUNDS OF SOCIALIST NATIONAL
ECONOMY.

UNCLASSIFIED

PAVLOV, P.V.

SPR 59008

C. 23

5

IV-8. STUDY OF THE FORMATION OF THE LEAD SULFIDE FILM STRUCTURE ON SUBSTRATES OF ROCK SALT SUBJECTED TO BOMBARDMENT BY H^+ , Ar^+ , Br^+ IONS

Article by Ye. I. Zorin, E. V. Kodlyarskaya, R. A. Nodulova, P. V. Pavlov, G. V. Sushakov, G. V. Kozlov, Cor. Vys. Research Physicochemical Institute under Poluprovodnikov Khimicheskii Plonok, Kazan, 17-17 June, 1972, p. 69

There are various opinions regarding the effect of substrate defects on the nature of the orientation and the structure of continuous films. Therefore, discovering the growth laws of the films on the substrates with automatically created defects is of scientific and practical interest.

In this paper the methods of electron diffraction and electron microscopy were used to study the laws of the formation of thin films of lead sulfide obtained by condensation in a vacuum on the order of 10^{-5} torr on rock salt $3 \cdot 10^4$ to 10^5 ions/cm².

It was established that:

- 1) Irradiation of the NaCl substrate with H^+ , Ar^+ and Br^+ ions leads to the fact that the film formation proceeds much more rapidly than on the control substrate, that is, the formation process is shifted in the direction of smaller thicknesses.
- 2) The magnitude of the critical thickness for which one growth stage or another takes place is less the greater the mass of the ions and the irradiation dose.
- 3) When determining the irradiation dose, depending on the type of ion, the epitaxial growth of the film is disturbed: irradiation by Br^+ ions with doses on the order of 10^5 ions/cm² leads to the formation of polycrystalline films.
- 4) In the films grown on irradiated substrates, defects of the crystal structure occur which are the same as on the control substrates (dislocations, dislocation grids, growth configurations), but with higher concentration.

1/2 038
UNCLASSIFIED
TITLE--USE OF THE ION BOMBARDMENT METHOD TO DOPE GERMANIUM -U-
PROCESSING DATE--30OCT70
AUTHOR--(04)-VOLODKO, V.G., ZORIN, YE.I., PAVLOV, P.V., TELEBAUM, D.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 812-13
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--ION BOMBARDMENT, GERMANIUM, DOPED ALLOY, BORON, ION, VOLT
AMPERE CHARACTERISTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0930
STEP NO--UR/0449/70/004/004/0812/0813
CIRC ACCESSION NO--AP0121532
UNCLASSIFIED.

SUBJECT AREAS--PHYSICS, CHEMISTRY

TOPIC TAGS--SEMICONDUCTOR MATERIAL, BORON, ANTIMONY, PHOSPHORUS, SILICON,
PHYSICAL DIFFUSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY LABEL/FRAME--3003/0159

STEP NO--UR/0181/70/012/005/1504/1910

CIRC ACCESSION NO--AP0129415

UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--30JCT70

CIRC ACCESSION NO--AP0121532

ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. THE SURFACE RESISTIVITY OF THE
INVERSION LAYER IN P TYPE GE BOMBARDED AT 50 KEV WITH P IONS AND
ANNEALED 30 MIN AT 200-600 DEGREES WAS STUDIED. THE ION BEAM WAS
ORIENTED NORMAL TO THE (111) PLANE AND THE ION DOSE WAS 0.1-1000
MICROCOULOMBS-CM PRIME2. THE SURFACE RESISTIVITY DEPENDS MONOTONICALLY
ON ANNEALING TEMP. THE INVERSION N TYPE LAYER IS FORMED AFTER ANNEALING
AT GREATER THAN 450 AND 350 DEGREES FOR ION DOSES OF 10-100 AND 1000
MICROCOULOMBS-CM PRIME2. RESP. NO INVERSION.

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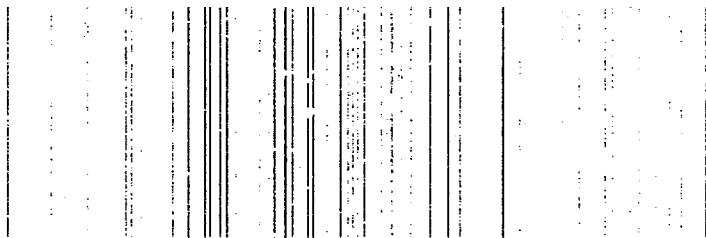
SIMILAR TO 10 PRIME4 AT 1 V.
INST., GORKI, USSR.

FACILITY: GOR'K. ISSLED. FIZ.-TEKH.

UNCLASSIFIED

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202330012-6



APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202330012-6"

UDC 8.74

USSR

PAVLOV, P. G., BELYAYEVA, T. M.

"Two Procedures for Allocating the Transfer Graph of the Program Control Algorithm in the Digital Computer Memory"

V sb. Ekcn.-mat. metody i programir. plan.-ekon. zadach (Mathematical Economic Methods and Programming Economic Planning Problems---collection of works), Moscow, 1972, pp 155-158 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V450)

No abstract

1/1

- 66 -

1/2 012 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--REPRODUCTION OF BASIC FUNDS IN THE USSR -U-
AUTHOR--(04)-ARAKELYAN, A.A., VOROTILOV, V.A., KANTOR, L.M., PAVLOV, P.M.
COUNTRY OF INFO--USSR
SOURCE--REPRODUCTION OF BASIC FUNDS IN THE USSR (VOSPROIZVODSTVO OSNOVNYKH
FUNDOV V SSSR) MOSCOW, Mysl', 1970, 484 PP
DATE PUBLISHED-----70
SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES
TOPIC TAGS--INDUSTRIAL MANAGEMENT, FINANCE, ECONOMIC SYSTEM CAPITAL
INVESTMENT, INDUSTRIAL DEVELOPMENT, S AND T DEVELOPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/0051 STEP NO--UR/0000/70/000/000/0001/0484
CIRC ACCESSION NO--AM0123832
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AM0123832

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TABLE OF CONTENTS: CHAPTER I
ECONOMIC NATURE OF BASIC INDUSTRIAL FUNDS 3. II STRUCTURE OF BASIC
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UTILIZATION OF BASIC FUNDS AND PREREQUISITES FOR THEIR HIGH
EFFECTIVENESS 74. V INCREASE OF THE ACTIVE PERIOD OF BASIC FUNDS 107.
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VIII DEPLETION OF BASIC FUNDS 181. IX SERVICES OF BASIC FUNDS 201. X
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BALANCE OF BASIC INDUSTRIAL FUNDS 446. THE MONOGRAPH DEALS WITH MAJOR
PROBLEMS IN REPRODUCTION OF BASIC INDUSTRIAL FUNDS OF SOCIALIST NATIONAL
ECONOMY.

UNCLASSIFIED

1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--USE OF THE ION BOMBARDMENT METHOD TO DOPE GERMANIUM -U-
AUTHOR-(O+)-VOLODKO, V.G., ZORIN, YE.I., PAVLOV, P.V., TELEBAUM, D.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(4), 812-13
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, MATERIALS
TOPIC TAGS--ION BOMBARDMENT, GERMANIUM, DOPED ALLOY, BORON, ION, VOLT
AMPERE CHARACTERISTIC
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0930 STEP NU--UR/0449/70/004/004/0812/0813
CIRC ACCESSION NO--AP0121532
UNCLASSIFIED

2/2 038

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121532

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SURFACE RESISTIVITY OF THE INVERSION LAYER IN P TYPE GE BOMBARDED AT 50 KEV WITH P IONS AND ANNEALED 30 MIN AT 200-800DEGREES WAS STUDIED. THE ION BEAM WAS ORIENTED NORMAL TO THE (111) PLANE, AND THE ION DOSE WAS 0.1-1000 MICROCOULOMBS-CM PRIME2. THE SURFACE RESISTIVITY DEPENDS MONOTONICALLY ON ANNEALING TEMP. THE INVERSION N TYPE LAYER IS FORMED AFTER ANNEALING AT GREATER THAN 450 AND 350DEGREES FOR ION DOSES OF 10-100 AND 1000 MICROCOULOMBS-CM PRIME2, RESP. NO INVERSION LAYER WAS OBSD. FOR DOSES SMALLER THAN 1 MICROCOULOMB-CM PRIME2. CURRENT VOLTAGE CHARACTERISTICS OF P,N JUNCTIONS FORMED IN N TYPE GE BY BOMBARDMENT AT 50 KEV WITH B IONS AND ANNEALING AT 400DEGREES EXHIBIT A RECTIFICATION COEFF. OF SIMILAR TO 10 PRIME4 AT 1 V. FACILITY: GOR'K. ISSLED. FIZ.-TEKH. INST., GORKI, USSR.

UNCLASSIFIED

1/2 034 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DIFFUSION OF ANTIMONY, PHOSPHORUS, AND BORON INTO SILICON FOR
DIFFERENT SURFACE CONCENTRATIONS OF THE DIFFUSANT -U-
AUTHOR--(04)-USKOV, V.A., PAVLOV, P.V., KURILCHIK, E.V., PASHKOV, V.I.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1504-10
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, CHEMISTRY
TOPIC TAGS--SEMICONDUCTOR MATERIAL, BORON, ANTIMONY, PHOSPHORUS, SILICON,
PHYSICAL DIFFUSION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0159 STEP NO--UR/0181/70/012/005/1504/1510
CIRC ACCESSION NO--AP0129415
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--04DEC70

2/2 034

CIRC ACCESSION NO--AP0129415

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DIFFUSION OF SB, P, AND B IN
SI WAS STUDIED AND THE RESULTS COMPARED WITH THEORY. LIMITS ARE
ESTABLISHED FOR APPLICABILITY OF THE AV. FIELD METHOD IN THE CASE OF
IMPURITY DIFFUSION INTO A SEMICONDUCTOR. FACILITY: GOR'K. GDS,
UNIV. IM. LOBACHEVSKOGO, GORKI, USSR.

UNCLASSIFIED

USSR

UDC 621.362.3

PAVLOV, P. V., VASIL'YEV, V. K., VOLOD'KO, V. G., ZORIN, Ye. I., TETEL'-
BAUM, D. I., TULOVCHIKOV, V. S., CHIGIRINSKAYA, T. Yu.

"Peculiarities of Concentration Profiles in Ion Implantation and Their
Use for Creating Varicaps and Bipolar Transistors"

Kiev, IVUZ, Radioelektronika, Vol 14, No 11, Nov 71, pp 1353-1364

Abstract: The authors consider the principal technically important singularities of concentration profiles in the case of ion-beam alloying both without distillation and after diffusion distillation of dopants. Problems of calculating the principal sections and depths of PN junctions on silicon as a function of conditions of irradiation and annealing are discussed. A description is given of the use of the ion-beam method for making a varicap with an inverse impurity gradient in the base, and also for making a binary PHP transistor. The basic parameters of the varicap are calculated. Nine figures, one table, bibliography of nine titles.

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- 73 -

1/2 028 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SURFACE STATES OF GERMANIUM AND SILICON UNDER SILICON DIOXIDE FILMS
APPLIED USING HIGH FREQUENCY GAS DISCHARGE PLASMA -U-
AUTHOR--(02)-PAVLOV, P.V., POPOV, YU.S.

COUNTRY OF INFO--USSR *p*

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 569-71

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THIN FLIM SEMICONDUCTOR, SILICON DIOXIDE, CRYSTAL SURFACE,
PLASMA BEAM INTERACTION, HIGH FREQUENCY DISCHARGE, DISCHARGE PLASMA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/0100

STEP NO--UR/0449/70/004/003/0569/0571

CIRC ACCESSION NO--AP0105186

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105186

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING THE METHODS OF AST, ET AL. (CA 59: 3574A) FOR DEPOSITING FILMS OF SiO₂ USING HIGH FREQUENCY GAS DISCHARGE PLASMA, SAMPLES WERE PREPD. AND STUDIED FOR EFFECTS OF PLASMA BOMBARDMENT ON THE SEMICONDUCTOR SURFACE. P TYPE GE (RHQ EQUALS 38-40 OHM CM) AND P TYPES SI (RHQ EQUALS OHM CM) WERE USED AS SUBSTRATES FOR THE DEPOSITION OF SiO₂ FILM. THE PRESSURE OF THE AR-O MIXT. IN THE CHAMBER DURING THE APPLICATION OF THE FILM APPEARED TO HAVE THE GREATEST EFFECT ON THE SURFACE STATE. FACILITY: FOR'K. ISSLED. FIZ. TEKH. INST., GORKI, USSR.

UNCLASSIFIED

PAVLOV, P.V.

Semiconductors

SPR 5 52665
 2 APR 67
 101 BOWLING GREEN AS A METHOD OF PREPARING MULTILAYER SEMICONDUCTOR DEVICES

UDC 621.382.3

Article by P. V. Pavlov, V. A. Yablonsky, V. I. Zolotarev, V. S. Kuznetsov, and T. M. Gubareva, *Radio Engng. Electron. Phys.*, 1970, Vol. 15, No. 4, pp. 493-502.

The physical basis of alloying silicon by ion bombardment (IB) is presented. IB of silicon with boron and phosphorus ions at energies up to 300 KeV is shown to provide reproducible alloying and distribution of these impurities at depths up to 1 micron for various temperatures. Generalized formulas of boron and phosphorus distributions in a broad range of dose densities and energies are obtained. These regularities afford reliable strengths and energies of different semiconductor devices. As an illustration, the formation of transistor structures by successive irradiation of multilayer structures of various structures by successive irradiation with boron and phosphorus ions is described. The scheme of fabrication with parameters of a planar p-n-p transistor made by a combination of IB and diffusion are presented.

Introduction

The method of alloying semiconductors by using ion bombardment (IB) has several key advantages: it affords the introduction into a specimen of exact amounts of various alloying elements; it makes it possible to control the profiles of the introduced impurities by varying the energy, dose strength, and relative orientation of the ion beam and of the specimen; it enables the undesirable effects caused by high-temperature heating and the attendant diffusion in combination with other technological procedures (diffusion and oxidation). In combination with other types of semiconductor devices (tubes), the IB method can be employed to make new types of semiconductor

Many investigations are currently underway in this field [1]. In many prototypes of rectifier [2, 3] and evidence [3, 4] shows which respect their diffusion counterparts as to their parameters were fabricated by IB. This superiority is related to the low temperature of alloying with the IB method, permitting bypassing of a substantial reduction in the diffusion of the nonbase charge carriers, curvature of the p-n junction surface, and partial avoidance of microplasma effects.

USSR

PAVLOV, S. Chairman of the Committee of Physical Culture and Sport, USSR
Council of Ministers

"To Each -- Health and Longevity"

Moscow, Agitator, No 13, Jul 70, pp 11-13

Abstract: Development of a rigorous athletic and sports program for all citizens has been and is advocated and actively promoted by the Communist Party of the Soviet Union (CP). With the Decree of August 1966 of the Central Committee of the CP, tens of millions of Soviet citizens are regularly participating in athletic training under qualified instructors. Not only the young or the soldiers of the Army receive athletic training: sport clubs and organizations, and athletic collectives have been established everywhere. Studies run at the State Ball-Bearing Factory in Moscow showed that workers regularly participating in sports had a higher work efficiency than a group of untrained workers. On the average, the exercising workers were 3.43% more efficient than non-exercising workers. In some cases, the work capacity of the athletically active workers was 9-10% higher than that of those who were inactive in sports. In a heavy machine construction firm in the Urals, the level of work achievement of athletically active workers was 9.8% higher than that of the remaining workers. In spite of many achievements of this

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USSR

PAVLOV, S., Agitator, No 13, Jul 70, pp 11-13

type, the introduction of physical culture into the daily life of all Soviet citizens is still slow. Particularly in the schools, physical education is not yet as widespread as it should be. Only the first two such courses have been planned. Although Soviet sportsmen are doing well in international championships and games, their achievements must be increased. Problems such as these remain to be solved by directors and administrators of Soviet sports.

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE HEAT TRANSFER MEDIUM IN THE VULCANIZATION BATH ON THE
PROPERTIES OF POROUS FILMS -U-
AUTHOR--(03)-OSTROVSKIY, V.I., KHROMOVA, N.S., PAVLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEK. PROM. 1970, (2), 48-53
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--VULCANIZATION, GLYCEROL, ORGANOSILICON COMPOUND, CARBOXYLATE
RUBBER, ORGANIC ISOCYANATE, FOOTGEAR, WATERPROOFING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1119

STEP NO--UR/0323/70/000/002/0048/0053

CIRC ACCESSION NO--AT0134805

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 016

CIRC ACCESSION NO--AT0134805

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. GLYCEROL, SILICONES, AND EUTECTIC MIXTS. OF MOLTEN SALTS WERE INVESTIGATED AS HEAT TRANSFER MEDIA IN THE VULCANIZATION BATH FOR PROCESSING RUBBER CONTG. CARBOXYL GROUPS WITH DIISOCYANATES. THE FILMS OBTAINED CAN BE APPLIED AS PRIMERS OR COATINGS FOR THE OUTER PARTS OF FOOTWEAR. FILMS VULCANIZED IN EUTECTIC MIXTS. HAD THE BEST PROPERTIES (HIGH STABILITY, SMALL SWELLING IN ETDAC). SILICONE PRODUCTS CAN BE USED, BUT WITH LIMITATIONS; GLYCEROL REACTS WITH A CONSIDERABLE AMT. OF DIISOCYANATE. THE HYDROPHILIC PROPERTIES OF FILMS WERE GREATER WHEN THE SAMPLES WERE VULCANIZED IN A WATER SOL. HEAT TRANSFER MEDIUM.

FACILITY: MOSK. TEKHNOL. INST. LEKG. PROM.,

MOSCOW, USSR.

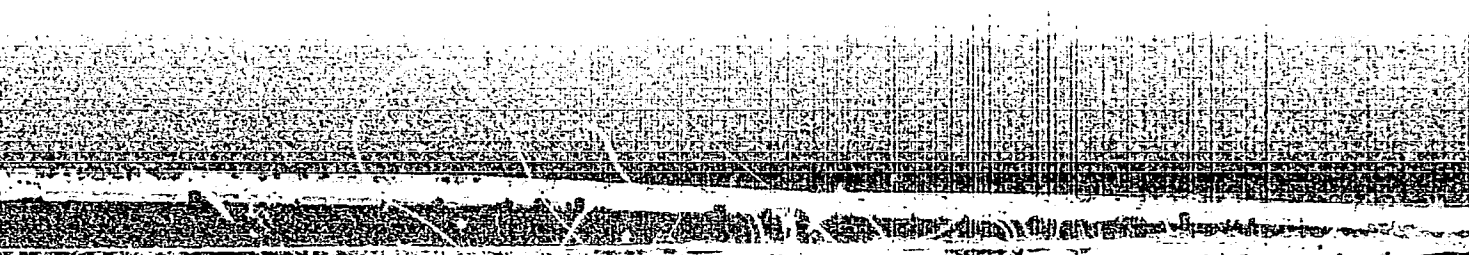
UNCLASSIFIED

1/2 032
UNCLASSIFIED
PROCESSING DATE--23OCT70
TITLE--REACTION OF CARBOXYL CONTAINING RUBBERS WITH DIISOCYANATES -U-
AUTHOR--(04)-PROKHOROV, L.I., SUTYRINA, G.A., KHROMOVA, N.S., PAYLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3), 7-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--CARBOXYLATE RUBBER, ISOCYANATE, TENSILE STRENGTH, MATERIAL DEFORMATION, POLYMER CROSSLINKING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0452
STEP NO--UR/0138/70/029/003/0007/0009
CIRC ACCESSION NO--AP0119388
UNCLASSIFIED

2/2 032
CIRC ACCESSION NO--AP0119388
ABSTRACT/EXTRACT--(U) GP-0- UNCLASSIFIED
PROCESSING DATE--23OCT70
ABSTRACT. THE FILMS PREPD. BY EVAPG. AT ROOM
TEMP. THE SOLNS. OF SKS-30-1 RUBBER AND TOLYLENE DIISOCYANATE (I) IN
ACDBU HAD 20-30 KG-CM PRIME2 TENSILE STRENGTH AT BREAK (SIGMA) AS
COMPARED WITH THE FILMS PREPD. AS ABOVE, BUT WITHOUT I. ANNEALING THE
FILMS CONTG. I INCREASED SIGMA LESS THAN OR EQUAL TO 70 KG-CM PRIME2.
THE CHANGES OF THE DEFORMATION CHARACTERISTICS OF THE FILMS CONTG. I
SHOWED THAT THE CROSSLINKING INCREASES WITH I AMT. ISOCYANATE GROUPS
REACT DURING CROSSLINKING WITH CO SUB2 H GROUPS.
MOSK. TEKHNOL. INST. LEKG. PROM. MOSCOW, USSR. FACILITY:

"APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202330012-6



APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202330012-6"

1/2 028

UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--SURFACE STATES OF GERMANIUM AND SILICON UNDER SILICON DIOXIDE FILMS
APPLIED USING HIGH FREQUENCY GAS DISCHARGE PLASMA -U-

AUTHOR--(02)-PAVLOV, P.V., POPOV, YU.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(3), 569-71

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THIN FILM SEMICONDUCTOR, SILICON DIOXIDE, CRYSTAL SURFACE,
PLASMA BEAM INTERACTION, HIGH FREQUENCY DISCHARGE, DISCHARGE PLASMA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

UNCLASSIFIED

USSR

UDC 621.382.3

PAVLOV, P. V., VASIL'YEV, V. K., VOLOD'KO, V. G., ZORIN, Ye. I., TETEL'-
BAUM, D. I., TULOVCHIKOV, V. S., CHIGIRINSKAYA, T. Yu.

"Peculiarities of Concentration Profiles in Ion Implantation and Their
Use for Creating Varicaps and Bipolar Transistors"

Kiev, IVUZ, Radioelektronika, Vol 14, No 11, Nov 71, pp 1353-1364

Abstract: The authors consider the principal technically important singularities of concentration profiles in the case of ion-beam alloying both without distillation and after diffusion distillation of dopants. Problems of calculating the principal sections and depths of PN junctions on silicon as a function of conditions of irradiation and annealing are discussed. A description is given of the use of the ion-beam method for making a varicap with an inverse impurity gradient in the base, and also for making a binary PNP transistor. The basic parameters of the varicap are calculated. Nine figures, one table, bibliography of nine titles.

272

028

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0105186

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BY USING THE METHODS OF AST, ET AL. (CA 59: 3574A) FOR DEPOSITING FILMS OF SiO₂ USING HIGH FREQUENCY GAS DISCHARGE PLASMA, SAMPLES WERE PREPD. AND STUDIED FOR EFFECTS OF PLASMA BOMBARDMENT ON THE SEMICONDUCTOR SURFACE. P TYPE GE (RHO EQUALS 38-40 OHM CM) AND P TYPES SI (RHO EQUALS OHM CM) WERE USED AS SUBSTRATES FOR THE DEPOSITION OF SiO₂ FILM. THE PRESSURE OF THE AR-O MIXT. IN THE CHAMBER DURING THE APPLICATION OF THE FILM APPEARED TO HAVE THE GREATEST EFFECT ON THE SURFACE STATE. FACILITY: FOR 'K. ISSLED. FIZ. TEKH. INST., GORKI, USSR.

UNCLASSIFIED

PAVLOV, P.V.

Semi Conductor

SPR 5 53965
 3 March 71
 ION IMPLANTATION AS A METHOD OF FABRICATING ULTIMATE SEMICONDUCTOR DEVICES
 Article by P. V. Pavlov, V. K. Vasiliev, Ye. I. Zorin, G. I. Zorin, L. S. Mikhlin, and A. M. Mikhlin, *Phys. Semiconductors*, Vol. 13, No. 4, 1970, pp. 273-281
 (U.S. Patent Office)

The physical basis of alloying silicon by ion bombardment (1) is presented. It is shown that boron and phosphorus ions at energies up to 200 keV may be shown to provide reproducible alloying and introduction of these impurities at depths up to 1 micron for specific applications. Controlled profiles of boron and phosphorus distributions in a broad range of dose strengths and energies were obtained. These regularities affect the diffusion of multilayer structures of different semiconductor devices. As an illustration, the formation of transistor structures by successive implantation with boron and phosphorus ions is examined. The method of fabrication and the parameters of a planar p-n-p transistor made by a combination of ion and diffusion are presented.

Introduction

The method of alloying semiconductors by using ion bombardment (1) has several key advantages: it affords the introduction into a specimen of exact amounts of various alloying elements; it allows it to be used to control the profile of the introduced impurities by varying the energy, dose strength, and relative orientation of the ion beam and of the specimen; it avoids certain undesirable effects caused by high-temperature heating and the attendant diffusion. In combination with other technological procedures (diffusion and oxidation), the ion method can be employed to make new types of semiconductor devices.

Many investigations are currently underway in this field (2,3). Laboratory prototypes of transistor (4,5) and diode (6,7) devices have shown their diffusion counterparts as to their parameters were fabricated by it.

This superiority is related to the low temperature of alloying with the ion method, permitting bypassing of a substantial reduction in the diffusion of the boron charge carriers, curvature of the p-n junction surface, and a partial avoidance of microplasma effects.

USSR

PAVLOV, S. Chairman of the Committee of Physical Culture and Sport, USSR
Council of Ministers

"To Each -- Health and Longevity"

Moscow, Agitator, No 13, Jul 70, pp 11-13

Abstract: Development of a rigorous athletic and sports program for all citizens has been and is advocated and actively promoted by the Communist Party of the Soviet Union (CP). With the Decree of August 1966 of the Central Committee of the CP, tens of millions of Soviet citizens are regularly participating in athletic training under qualified instructors. Not only the young or the soldiers of the Army receive athletic training; sport clubs and organizations, and athletic collectives have been established everywhere. Studies run at the State Ball-Bearing Factory in Moscow showed that workers regularly participating in sports had a higher work efficiency than a group of untrained workers. On the average, the exercising workers were 3.43% more efficient than non-exercising workers. In some cases, the work capacity of the athletically active workers was 9-10% higher than that of those who were inactive in sports. In a heavy machine construction firm in the Urals, the level of work achievement of athletically active workers was 9.8% higher than that of the remaining workers. In spite of many achievements of this

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USSR

PAVLOV, S., Agitator, No 13, Jul 70, pp 11-13

type, the introduction of physical culture into the daily life of all Soviet citizens is still slow. Particularly in the schools, physical education is not yet as widespread as it should be. Only the first two such courses have been planned. Although Soviet sportsmen are doing well in international championships and games, their achievements must be increased. Problems such as these remain to be solved by directors and administrators of Soviet sports.

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1/2 016 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--EFFECT OF THE HEAT TRANSFER MEDIUM IN THE VULCANIZATION BATH ON THE
PROPERTIES OF POROUS FILMS -U-
AUTHOR--(03)-OSTROVSKIY, V.I., KHROMOVA, N.S., PAVLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., TEKHNOL. LEGK. PROM. 1970, (2), 48-53
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS, MILITARY SCIENCES
TOPIC TAGS--VULCANIZATION, GLYCEROL, ORGANOSILICON COMPOUND, CARBOXYLATE
RUBBER, ORGANIC ISOCYANATE, FOOTGEAR, WATERPROOFING
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3006/1119 STEP NO--UR/0323/70/000/002/0048/0053
CIRC ACCESSION NO--AT0134805

UNCLASSIFIED

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CIRC ACCESSION NO--AT0134805

UNCLASSIFIED

PROCESSING DATE--13NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. GLYCEROL, SILICONES, AND EUTETIC MIXTS. OF MOLTEN SALTS WERE INVESTIGATED AS HEAT TRANSFER MEDIA IN THE VULCANIZATION BATH FOR PROCESSING RUBBER CONTG. CARBOXYL GROUPS WITH DIISOCYANATES. THE FILMS OBTAINED CAN BE APPLIED AS PRIMERS OR COATINGS FOR THE OUTER PARTS OF FOOTWEAR. FILMS VULCANIZED IN EUTECTIC MIXTS. HAD THE BEST PROPERTIES (HIGH STABILITY, SMALL SWELLING IN ETOAC). SILICONE PRODUCTS CAN BE USED, BUT WITH LIMITATIONS; GLYCEROL REACTS WITH A CONSIDERABLE AMT. OF DIISOCYANATE. THE HYDROPHILIC PROPERTIES OF FILMS WERE GREATER WHEN THE SAMPLES WERE VULCANIZED IN A WATER SOL. HEAT TRANSFER MEDIUM. FACILITY: MOSK. TEKHNOL. INST. LEGK. PROM., MOSCOW, USSR.

1/2 032 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--REACTION OF CARBOXYL CONTAINING RUBBERS WITH DIISOCYANATES -U-
AUTHOR--(04)-PROKHOROV, L.I., SUTYRINA, G.A., KHROMOVA, N.S., PAYLOV, S.A.
COUNTRY OF INFO--USSR
SOURCE--KAUCH. REZINA 1970, 29(3), 7-9
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS
TOPIC TAGS--CARBOXYLATE RUBBER, ISOCYANATE, TENSILE STRENGTH, MATERIAL
DEFORMATION, POLYMER CROSSLINKING

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1997/0452 STEP NO--UR/0138/70/029/003/0007/0009
CIRC ACCESSION NO--AP0119388
UNCLASSIFIED

2/2 032

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119388

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FILMS PREPD. BY EVAPG. AT ROOM TEMP. THE SOLNS. OF SKS-30-1 RUBBER AND TOLYLENE DIISOCYANATE (I) IN ACOBU HAD 20-30 KG-CM PRIME2 TENSILE STRENGTH AT BREAK (SIGMA) AS COMPARED WITH THE FILMS PREPD. AS ABOVE, BUT WITHOUT I. ANNEALING THE FILMS CONTG. I INCREASED SIGMA LESS THAN OR EQUAL TO 70 KG-CM PRIME2. THE CHANGES OF THE DEFORMATION CHARACTERISTICS OF THE FILMS CONTG. I SHOWED THAT THE CROSSLINKING INCREASES WITH I AMT. ISOCYANATE GROUPS REACT DURING CROSSLINKING WITH CO SUB2 H GROUPS. FACILITY: MOSK. TEKHNOL. INST. LEGK. PROM. MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 632.95

PAVLOV, S. D.

"Results of Tests of Some Insecticides Against Dipterous Bloodsucking Insects Ectoparasites of Farm Animals"

V sb. Materialy vet. arakhno-entomol. i vet. san. (Materials of Arachno-Entomological and Veterinary Sanitation--Collection of Works), Tyumen', 1970, pp 133-142 (from RZh-Khimiya, No 23, 10 Dec 70, Abstract No 23 N714 by T. K. Yudovskaya)

Translation: Eleven insecticides were tested as agents for controlling dipterous bloodsucking insects. Technical DDVF (containing 97% active principle), 20% concentration of baygon emulsion, and 52.7% concentrate of emulsion of dibrom and pibutrin containing 6% pyrethrins proved to be the most effective against horseflies. Aqueous solutions of DDVF with OP-7 are recommended for spraying animals. The other preparations need to be studied further for their cumulative properties and degree of toxicity for the animals to be treated.

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UDC 621.384.6

USSR

FAVLOV, S.I.

"Unit For Measurement Of Potential Distribution And Potential Gradient In Electron Devices"

USSR Author's Certificate No 266102, filed 28 Apr 69, published 28 July 70
(from RZh--Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A400P)

Translation: A unit is proposed for measurement of the potential distribution and potential gradient in electron devices, which contains the source of a beam of neutral particles and an ion recorder consisting of a particle energy analyzer, a collimator, and detector. With the object of increasing the precision of measurement of the potential in all the space occupied by a beam of charged particles, in the path of the neutral particles beam there is installed a modulator of the beam, e.g., in the form of a mechanical chopper, and the source of a beam of neutral particles and the ion recorder are installed at the separately acting transfer mechanisms.

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- 41 -

Acc. Nr:

P
AP0037845

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 1, pp *108-114*

SINGLE AND MULTIPLE IONIZATION OF LEAD
ATOMS BY ELECTRONS

Pavlov, S. I.; Stotskiy, G. I.

Methods for measurement of the true cross sections for ion production by electron impact are analyzed. For measurement of the true cross sections one must know the exact value of the proportionality coefficients between the ion current in the source and the ion current recorded by the detector or else apply the so-called difference method. The difference method is employed for measuring the cross sections for production of Pb^+ to Pb^{2+} ions by electron impact. The cross sections were normalized according to the known value of the total cross section. The single ionization cross section measured for lead at energies above 260 eV agrees with that calculated in the Born approximation. A structure can be discerned in the initial part of the single ionization curve. The results confirm the power threshold law for single and double ionization of lead atoms by electrons.

REEL/FRA

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08

Corrosion

USSR

UDC 669.24-28:620.193.41

PAVLOV, S. S., and SVISTUNOVA, T. V., Moscow, Chemical Machine Building Institute, Central Scientific Research Institute of Ferrous Metallurgy

"Intercrystalline Corrosion in Alloys Such as N70M28"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 20-22

Abstract: A study was made of the effect of tungsten, titanium, and zirconium on the tendency of N70M28 alloy toward intercrystalline corrosion. Ten laboratory melts were studied with the following chemical composition, in percent: Fe about 3; W 3.5, 4.3, and 5.3, Ti 1.1, 1.8, and 2.6; Zr 0.012, 0.02, and 0.12, plus 25.6-29.0% Mo; 0.02-0.03% C; 0.01-0.08% Si; 0.13-0.24% Mn; 0.002-0.003% S; 0.001-0.005% P; remainder nickel. The continuous lattice of carbides on the grain boundaries was found to be the main reason for the tendency of N70M28 alloy toward intercrystalline corrosion when heated. The intercrystalline corrosion tendency of the alloy can be eliminated by introducing 3.5-5.3% W, whereas addition of 1.1-2.6% Ti and 0.012-0.12% Zr accelerates the appearance of intercrystalline corrosion under high-temperature

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USSR

PAVLOV, S. S., and SVISTUNOVA, T. V., Metallovedeniye i Termicheskaya Obrabotka Metallov, No 10, 1970, pp 20-22

conditions. The tendency of N70M28 alloy toward intercrystalline corrosion in the low-temperature area results from the formation of the intermetallic phase Ni_4Mo and the resulting stresses. Strong carbide forming elements (tungsten, titanium, and zirconium) have no influence on the tendency of this alloy toward intercrystalline corrosion in the low-temperature area.

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USSR

UDC 621.317.311

PAVLOV, S. S., POGULYAYEVSKIY, YA. S., FROLOV, V. P.

"Autooscillator Direct-Current Amplifier for Measuring Small Direct Currents"

Avtomatiz. khim. proiz-v--V sb. (Automation of Chemical Production -- collection of works), vyp. 5, Moscow, 1970, pp 103-109 (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A273)

Translation: A study is made of some results of creating small current meters on the basis of varicaps which are used for conversion of DC signals to AC signals. A decrease in the zero drift effect on the measurement results is achieved. It is demonstrated that when using varicaps with a p-n-junction the meters have a sensitivity of up to $1 \cdot 10^{-12}$ amps, and when using surface varicaps, up to $1 \cdot 10^{-14}$ amps.

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USSR

YURCHENKO, Yu. F., AKAPOV, G. I., GLEK, L. M., and PAVLOV, S. S., Moscow

"Knife Corrosion Mechanism in Kh18Ni10T Steel Alloys"

Kiev, Avtomaticheskaya Svarka, No 10, Oct 70, pp 20-22

Abstract: Although many papers have been devoted to the subject of knife corrosion, very little is known about its mechanism. This type of corrosion advances very rapidly, at about 5 to 10 mm/year, cutting holes in equipment and piping. The purpose of this article is to investigate the mechanism of the process in Kh18Ni10T steel, specifically in the welding alloys of the chromium-nickel steel. In the experiments, the basic structural components of the steel, chromium-nickel austenite, Cr_3C_2 , and TiC, were electrochemically investigated. Type Kh18Ni10 steel, after tempering in water from 1100°C , was used as the electrode of chromium-nickel austenite. The Cr_3C_2 and TiC electrodes were obtained by the method of hot sintering and pressing at 1750°C for Cr_3C_2 and 2500°C for TiC, and pressures of 120 kg/cm^2 in the course of five minutes. The electrodes were in the form of disks 15 mm in diameter and 4-5 mm thick. Comparison of the stationary potentials of the Cr_3C_2 and TiC electrodes shows that the potential of the latter is much more negative than that of the former, that the Cr_3C_2

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USSR

YURCHENKO, Yu. P., et al, Avtomaticheskaya Svarka, No 10, Oct 70, pp 20-22

and austenite are cathodes while the TiC are polarized anodes, and that in the introduction of an additional ferrite electrode to form a three-electrode system, the potentials shift into the negative region as a result of cathode polarization.

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LANG, I. G.; PAVLOV, S. T. (Institute of Semiconductors, USSR Academy of Sciences, Leningrad)

"Deformation Interaction of Conduction Electrons with an Ultrasonic Wave"

Leningrad, Fizika Tverdogo Tela; August, 1970; pp 2412-20

ABSTRACT: The problem of the motion of a conduction electron in a crystal along which is propagated an ultrasonic wave is solved by means of the method of a density matrix. The scattering of electrons by impurity atoms is taken into account. The study is made in a laboratory system of coordinates. It is shown that intrazonal as well as interzonal elements of the density matrix contribute to the macroscopic density of the electron current. The equation for intrazonal matrix elements leads to a classical kinetic equation such that the classical Hamiltonian has the form $\xi_0(p) + L_{1k}(p)u_{1k}$. The physical meaning of the expression $L_{1k}(p)u_{1k}$ is that it describes the average increase in electron

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LANG, I. G., et al, Fizika Tverdogo Tela, August, 1970, pp 2412-20

energy with a quasi pulse p in a crystal subjected to deformation. A microscopic expression is obtained for the tensor $L_{ik}(p)$ from which it follows that $L_{ik}(p)$ vanishes for free electrons. A connection with the results of the existing phenomenological theories of Akhiezer, Kaganov, Lyubarskiy, and Kontorovich (ZhETF, 8, 1330, 1938; ZhETF, 32, 837, 1957; ZhETF, 45, 1638, 1963) and the theory of T. Holstein (Phys. Rev., 113, 479, 1959) is shown. It is proven that the introduction of the tensor $\lambda_{ik}(p)$ by Akhiezer, Kaganov, Lyubarskiy, and Kontorovich is equal to $\lambda_{ik}(p) = L_{ik}(p) - n_0 v_{ik}$; i.e., it does not vanish at the limit of the free electrons.

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NEW STEP ALONG THE PATH TOWARD PROLONGED SPACE FLIGHTS.

UNCLASSIFIED

USSR

UDC: 531.383

PAVLOV, V. A., Leningrad Institute of Aviation Instrument Making

"Concerning the Effect of Gyromotor Torque on Gyroscope Dynamics"

Leningrad, Izvestiya VUZov: Priborostroyeniye, Vol 16, No 8, 1973, pp 65-68

Abstract: A study is made of conditions under which the torque of a gyromotor influences the motion of a gyroscope about the axes of its suspension. It is found that the nature of the influence of oscillations of the inner Cardan ring about the principal axis of the gyroscope on the natural oscillation of its rotor depends on the dynamic coefficient σ and the angle of the initial phase λ . It is found that for ratios of the frequencies of forced and natural oscillations much greater than unity the coefficient σ is approximately -1 and the phase shift is π rad. Therefore rotations of the inner Cardan ring around the principal axis of the gyroscope will not change the speed of rotation of the rotor in inertial space. On the other hand, when this frequency ratio is much less than unity, the coefficient σ is close to zero, and, consequently, in this case the rotor will turn at a constant speed relative to the inner ring.

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USSR

UDG: 539.4:629.7.02

PAVLOV, V. A.

"Calculating a Thin-Walled Fan-Shaped Wing"

Kazan', Izvestiya Vysshikh Uchebnykh Zavedeniy, Aviatsionnaya Tekhnika, No 1, 1973, pp 38-44

Abstract: The author presents a solution to a problem associated with determining the stresses and deformations of a longeron fan-shaped lifting surface with a partial closing along the root chord. Loading by aerodynamic, mass, and concentrated forces is assumed to be arbitrary. In solving the proposed problem, the author uses the hypothesis concerning the absence of normal stresses in the skin panels along the lines of their junction with the longerons and the ribs. The hypothesis concerning the invariability of the shape of the wing cross section had to be discarded. In conjunction with the particular location of the longerons, the author had to take into consideration both their conicity and the curvature of the hoops. In order to find the solution, deformation compatibility conditions were used in the form of least work. These conditions are reduced to a system of linear algebraic equations noted in the form of one-two typical equations.

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USSR

UDC 621.762.4:621.77.2

PAVLOV, V. A., ZHIVOV, L. I., SHCHERBINA, V. V., LYASHENKO, A. P.,
PETRYKINA, R. YA., LITVIN, Zaporozh'ye Machine Building Institute imeni
V. Ya. Chubar'

"Hot Extrusion of Powdered Titanium"

Kiev, Poroshkovaya Metallurgiya, No 8, Aug 73, pp 15-19

Abstract: Hot extrusion of titanium powder was studied using a 1600 ton-force crank press. The raw powder, sintered billets, and, for comparison, sheet titanium were extruded. Both open and closed dies were used. It was observed that there was a decrease in grain size with a simultaneous increase of their total surface area, promoting intensification of intergranular diffusion which occurs with a significant increase in the diffusion rate, caused by the high specific force and temperature (950°C). Mechanical properties of briquets extruded at 950°C and heat treated by annealing at 750°C for three hours in a vacuum of $2 \cdot 10^{-4}$ mm Hg are compared with briquets which were vacuum sintered at 1200°C for three hours prior to extruding and given the same heat treatment as stated above after extruding. Density and mechanical properties of the vacuum sintered briquets is slightly higher than the non-vacuum sintered briquets but not enough to warrant the additional

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PAVLOV, V. A., et al., Poroshkovaya Metallurgiya, No 8, Aug 73, pp 15-19

cost of vacuum sintering. The introduction of extruded powder-titanium parts and titanium-alloy powder parts to replace cast parts will result in increased savings by using a less expensive raw material, shortening of intermediate operations, increased die strength, increased labor productivity, and decreased metal losses. Three figures, one table, three bibliographic references.

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USSR

UDC 669.71:539.370

VIL'DANOVA, N. F., NOSKOVA, N. I., and PAVLOV, V. A., Institute of Metal Physics, UNTs [expansion unknown] Academy of Sciences USSR

"Effect of Ultrasonic Vibrations on the Mechanical Properties and Fine Structure of Aluminum and an Al-Mg Alloy"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 1, 1973, pp 129-134

Abstract: Alloy grade AL27-1 (containing (in Wt %): 10-11 Mg, 0.1 Ti, 0.1 Zr, 0.1 Be) and pure aluminum (99.99%) were studied in order to determine the effect of ultrasonic action of low power (5-19 v/cm²) on the structure and mechanical properties of these materials. Alloy AL27-1 had increased tensile strength and an exceptional increase in ductility after ultrasonic treatment (from 4 to 12% elongation). These improvements in mechanical properties are attributed to the formation of dislocations which interact to form a large number of vacancies. The appearance of a large number of dispersed precipitations is explained by acceleration of aging processes due to the large amount of vacancies. The somewhat lowered yield strength of the alloy after ultrasonic treatment is attributed to the presence of free dislocations formed by ultrasonics. Three figures, one table, fourteen bibliographic references.

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USSR

UDC 547.26'118

RAZUMOV, A. I., KRIVOSHEYEVA, I. A., LIORBER, B. G., TARZIVOLOVA, T. A.,
and PAVLOV, V. A., Kazan' Institute of Chemical Technology imeni S. M.
Kirov

"Investigation in the Series of Phosphinic and Phosphinous Acid Derivatives.
LXXXII. Kinetics of Hydrolysis of Diallylphosphinic Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72, pp 496-498

Abstract: Biologically active compounds have been found among the diallylphosphinic acid esters. The authors investigate the kinetics of uncatalyzed hydrolysis of these esters in an effort to determine the effect of the structure of the alkoxy radicals on their reactivity. Compounds of the $(CH_2=CHCH_2)_2P(O)OR$ type containing saturated radicals of normal and branched structure as well as unsaturated radicals with double and triple bonds in the ester group ($R = CH_3, C_2H_5, n-C_3H_7, iso-C_3H_7, C_4H_9, iso-C_4H_9, sec-C_4H_9, CH_2=CH, CH_2=CHCH_2, CH_3CH=CHCH_2, CH=CCH_2$) were selected for study. The kinetics of hydrolysis were checked by titration. Preliminary experiments showed that diallylphosphinic acid and the corresponding alcohol formed during the reaction have no effect on the course of hydrolysis. Diallylphosphinic acid needed for the experiments was synthesized by treating diallylphosphinic
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RAZUMOV, A. I., et al., Zhurnal Obshchey Khimii, Vol 42(104), No 3, Mar 72,
pp 496-498

acid chloride with equivalent quantities of water. The experimental data indicate that the hydrolysis of these esters takes place with splitting of the C-O bond. The monomolecular reaction is apparently the rate determining step for the reaction of the esters studied. The results of the work may be useful in studying the alkylating capacity of diallylphosphinic acid esters.

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